

# Cryogenic Gas Relief Valves, ASME PRV19430 & PRV29430 Series

## Application (For ISO Tank & LGC)

The 19430 and 29430 relief valves are designed for oxygen and other industrial gases and for cryogenic service in the vapor space. Apply on piping systems, liquid cylinders or mini-bulk cryogenic containers where an ASME relief valve is required.



## Features

- A.S.M.E. rated, National Board Certified
- Bubble tight at 95% of set pressure
- Full flow at 110% at set pressure
- Repeatable performance
- 100% factory tested
- Temperatures Range (Teflon Seat) -320° to +165° F (-196°C to +74°C)  
(Fluorosilicone Seat) -60° to +165° F (-51°C to +74°C)
- Cleaned and packaged for oxygen service per CGA G-4.1
- Rated for gas service only
- Color coded labels clearly identify pressure setting range
- Tamper resistant
- In liquid service be sure to use with a candy cane riser (Sold Separately)

## Materials SS Style

Body .....	Stainless Steel
Spring .....	Stainless Steel
Seat Retainer.....	Stainless Steel
Pipe-Away Adapter .....	Stainless Steel

## Materials PRV and B-Style

Body .....	Brass
Spring .....	Stainless Steel
Seat Retainer.....	Brass
Pipe-Away Adapter .....	Brass

## Flow Performance

For set pressures 90 - 600 capacity is 0.783 SCFM of air per psig of flow pressure. For set pressures 15 - 89 capacity is 0.750 SCFM of air per PSIA of flow pressure. Flow pressure per ASME is 10% above set pressure or +3 psig (0.2 barg), whichever is greater.

## Ordering Information

Fill in the blanks with options below.

Example: PRV019432T350

PRV	1	9432	T	Blank or "P"	350
Style	Body Material	Size	Seat Material	Drain Hole	Set Pressure

## Body Material Option

- 1 ASME approved valve made of brass
- 2 ASME approved valve made of stainless steel

## Seat Material Option

- F for Fluorosilicone for 15 to 139 psig (6.2 - 9.5 barg) set points.
- T for PTFE for 140-600 psig (9.6 - 41.4 barg) set points.

## Drain Hole Option

Leave blank for relief with drain hole. Insert P if no drain hole.

## Set Pressure

Enter number for set pressure in psig (6.2 - 41.4 barg) from 15 to 600.

## Ordering Information

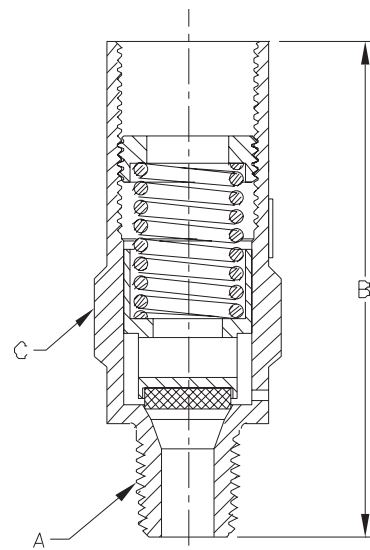
Part Number	Material	Inlet A Inches (mm)	Height B Inches (mm)	Wrenching Hex C Inches (mm)	Orifice Size
PRV19432	Brass	¼" (6.35)	2.6" (66.04)	⅜" (22.35)	.062 sq. inch 1.57 sq. mm
PRV29432	Stainless Steel				
PRV19433	Brass	⅜" (9.65)	2.8" (71.12)	⅜" (22.35)	.062 sq. inch 1.57 sq. mm
PRV29433	Stainless Steel				
PRV19434	Brass	½" (12.70)	2.8" (71.12)	⅜" (22.35)	.062 sq. inch 1.57 sq. mm
PRV29434	Stainless Steel				

Pipe-away adapter options available (sold separately)

Drain hole can not be used with pipe-away



19430 Series



Setpoint tolerance is ± 3% of the set pressure or ± 2 psig whichever is greater.

**WARNING:** Inspection and maintenance of pressure relief valves is very important. Failure to properly inspect and maintain pressure relief valves could result in personal injuries or property damage. The useful safe service life of a pressure relief valve may be significantly affected by the service environment.

# Cryogenic Gas Relief Valves, Non-ASME 9400 Series

## Application (For ISO Tank & LGC)

9400 series relief valves are specifically designed for vapor line safety relief applications and cryogenic liquid containers.

## Features

- Cleaned and packaged for oxygen service per CGA G-4.1
- Bubble tight at 95% of set pressure
- Color coded labels clearly identify pressure setting range
- Tamper resistant
- Adapters provide standard pipe thread connections for venting gas to the outdoors
- Repeatable performance
- 100% factory tested
- Temperature Range (Teflon Seat) -320° to +165° F (-196°C to +74°C)  
(Fluorosilicone Seat) -60° to +165° F (-51°C to +74°C)
- Rated for gas service only
- In liquid service be sure to use with a candy cane riser (Sold Separately)
- Setpoint tolerance ± 3%

## Materials SS Style

Body .....	Stainless Steel
Spring .....	Stainless Steel
Seat Retainer.....	Stainless Steel
Pipe-Away Adapter .....	Stainless Steel

## Materials PRV and B-Style

Body .....	Brass
Spring .....	Stainless Steel
Seat Retainer.....	Brass
Pipe-Away Adapter .....	Brass

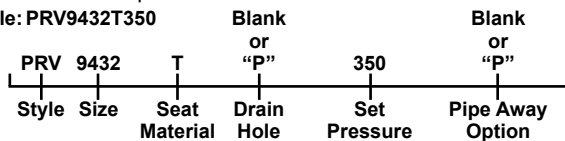
## Flow Performance

- For set pressures 90 - 600 psig capacity is 0.783 SCFM of air per psig of flow pressure. For set pressures 15 - 89 psig capacity is 0.750 SCFM of air per psig of flow pressure.
- B-9425N flow of 6.7 SCFM Air/psig at 120% of set pressure.
- B-9426N flow of 11.0 SCFM Air/psig at 120% of set pressure

## Ordering Information

Fill in the blanks with options below.

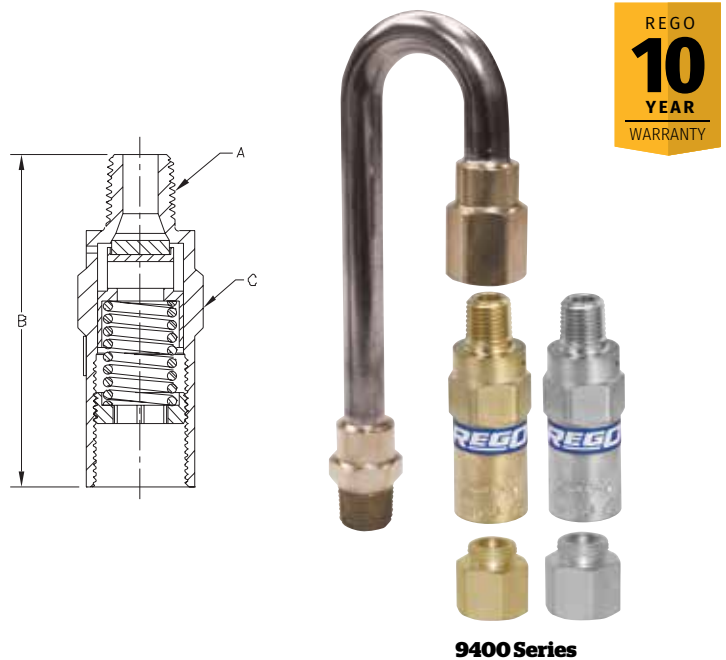
Example: PRV9432T350



This example part number indicates a ¼" M.NPT PRV style brass relief valve with PTFE seat, set at 350 psig with drain hole and no pipe away adapter.

## Ordering Information

Style	Size	Inlet M.NPT A Inches (mm)	Body and Valve Material	Pressure Setting Range psig (barg)	Height B Inches (mm)	Wrenching Hex C (mm)	Orifice Size Sq. Inch (mm)	Pipe-Away Adapter P/N	Pipe-Away Outlet FN.PT. Inches (mm)			
PRV	9432	¼" (6.35)	Brass	10-600 (0.68-41.36)	2.6" (66.04)	⅞" (22.35)	.062 (1.57)	B-9412-2	⅜" (9.65)			
SS			Stainless Steel					SS9412-4	½" (6.35)			
PRV	9433	⅜" (9.65)	Brass					Stainless Steel	2.8" (71.12)	B-9412-2	⅜" (9.65)	
SS			Stainless Steel							SS9412-4	½" (6.35)	
PRV	9434	½" (12.70)	Brass		20-300 (1.37-20.68)			3.4" (86.36)	1¼" (44.45)	.44 (11.17)		B-9412-4
SS			Stainless Steel								SS9412-4	
B-	9425	¾" (19.05)	Brass	60-300 (4.13-20.68)	5.3" (134.62)	2⅝" (60.45)	.62 (15.74)	B-3131-10	1" (25.4)			
	9426	1" (25.4)		60-300 (4.13-20.68)	5.3" (134.62)	2⅝" (60.45)	.62 (15.74)	B-3132-10	1¼" (31.75)			



## Seat Material Option

F for Fluorosilicone for PRV and SS styles for 16-139 psig (1.10 - 9.58 barg)  
T for PTFE for PRV and SS styles for 140-600 psig (9.65 - 41.36 barg)  
N for B-9425 and B-9426, Fluorosilicone seat, all set pressures.

## Drain Hole Option

Relief valves without pipeaway typically provided with drain holes, leave blank. P - for relief valves without drain hole, for example PRV9432TP350  
Drain hole can not be used with pipeaway.

## Pipe Away Option

P Pipeaway included and attached, No drain hole in relief valve.  
For example PRV9432TP350P  
Leave blank for relief valve without pipe-away attached.  
For example PRV9432TP350.

## Set Pressure

Specify set pressure within range specified for style and size. The B-9425 & B-9426N are available in select settings only. Special order.

For easy identification, the following standard settings have color coded labels for all PRV and SS Style sizes and settings marked in psig and barg:

**WARNING:** Inspection and maintenance of pressure relief valves is very important. Failure to properly inspect and maintain pressure relief valves could result in personal injuries or property damage. The useful safe service life of a pressure relief valve may be significantly affected by the service environment.

# ES8450 & TES8450 Series Extended Stem Valves BK9450 & BK9470 Series Extended Bonnet Valves

## Application (For ISO Tank)

For use as a trycock valve or hose drain valve on cryogenic tanks, or as a use, liquid fill, or vent valve on mini-bulk cryogenic tanks. These valves can be used also for other cold gas applications requiring extended stem valves as LNG fueling.

## Features

- Union bonnet
- One piece stainless steel stem
- Conical seat design
- Maximum working pressure is 600 psig (42 barg)
- Working temperature is -320°F to +165°F (-196°C to 74°C)
- Cleaned for oxygen service per CGA G-4.1
- 100% Factory Tested

### TES8450 Series specific feature:

- Grafoil® packing
- Approved by PED and TPED

### ES8450 Series specific feature:

- Manual torque compression packing

### BK9450 and BK9470 Series specific feature:

- Extended bonnet and spring loaded packing

### BK9470 Series specific feature:

- 304 St. Stl Tube brazed into both ends

## Materials

Body and Bonnet.....Brass  
Stem ..... Stainless Steel  
Seat Disc..... PCTFE  
Handwheel..... Aluminum  
Bonnet Gasket..... PTFE

## Conversion Kit

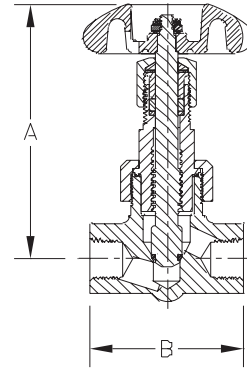
BK 9450-KIT is a bonnet and stem assembly kit to convert ES 8450 series and previous ES 9450 Series to the BK 9450 style.

## Ordering Information

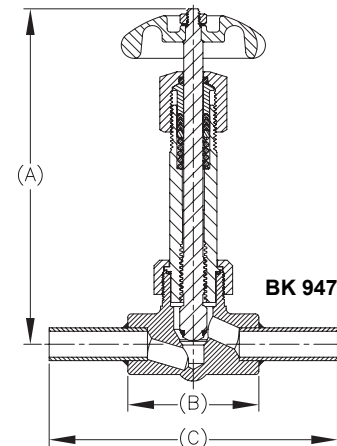
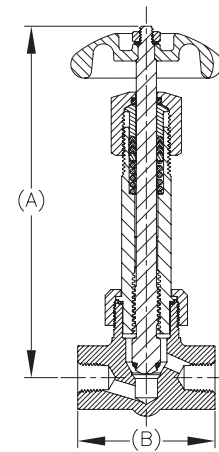
Part Number	Inlet/Outlet Connections	Packing	Height "A"		Body Width "B"		Width with Tube "C"		Cv (Kv)		
			Inches	mm	Inches	mm	Inches	mm			
ES8452	1/4" FNPT	PTFE	4.2"	107	2.5"	63	N/A		0.70 (0.60)		
TES8452		Grafoil									
ES8453	3/8" FNPT	PTFE									
TES8453		Grafoil									
ES8454	1/2" FNPT	PTFE									
TES8454		Grafoil									
BK9452	1/4" FNPT	PTFE	6.5"	165	2.5"	63	N/A		0.70 (0.60)		
BK9453	3/8" FNPT										
BK9454	1/2" FNPT										
BK9453FA	5/8" OD tubing x 3/8" FNPT								4.0"	102	1.10 (0.95)
BK9475A	5/8" OD tubing both ends								5.5"	140	



ES 8450 Series



BK 9450 Series



BK 9470 Series



# Short Stem Cryogenic Valves

## T9450 Series & T9460 Series

### Application (For ISO Tank & LGC)

The T9450 and T9460 series valves are designed for use on portable cryogenic cylinders and other in-line shut-off valve applications.

### Features

- Spring loaded stem seal automatically adjusts for any gasket wear, eliminating the need to constantly retighten the packing nut
- Non-rising stem and low profile allow the valve to fit into tight areas and still provide easy access
- Unique pressure-sealed moisture barrier helps prevent freeze up at cryogenic temperatures
- Conical swivel seal design helps prevent seat galling from over torquing
- Cleaned for oxygen service per CGA G-4.1
- Maximum working pressure is 600 psig (42 barg)
- Working temperature range is -320°F to +165°F (-196°C to +74°C)
- Approved for TPED in accordance with EN1626
- 100% Factory Tested

### Materials

Body .....	Brass
Bonnet .....	Brass
Seat Disc .....	PCTFE
Stem Seal Gasket.....	PTFE
Handwheel.....	Aluminum
Spring .....	Stainless Steel
Stem .....	Brass
Poppet .....	Brass

### Ordering Information

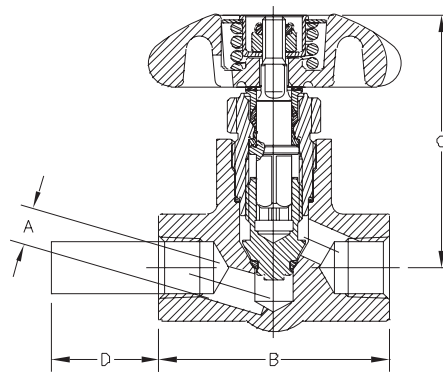
Part Number	Inlet	Outlet	Orifice A	Length B		Height (Approx.) C		Tube D	C <sub>v</sub> (K <sub>v</sub> )
				inches	mm	inches	mm		
<b>T9452</b>	¼" F.NPT	¼" F.NPT	.250	2½"	63.50	2¾"	69.85	None	.99 (0.85)
<b>T9453</b>	⅜" F.NPT	⅜" F.NPT	.406						1.76 (1.52)
<b>T9454</b>	½" F.NPT	½" F.NPT	.406						1.79 (1.54)
<b>T9464CA</b>	.675" O.D. Tube	⅜" F.NPT	.406	2½"	63.50	2¾"	69.85	1⅛"	1.76 (1.52)
<b>T9464DA</b>								2⅛"	
<b>T9464ADA</b>								3⅛"	



**T9450 Series**



**T9460 Series**



## Extended Stem Retrofit Kits

### Application

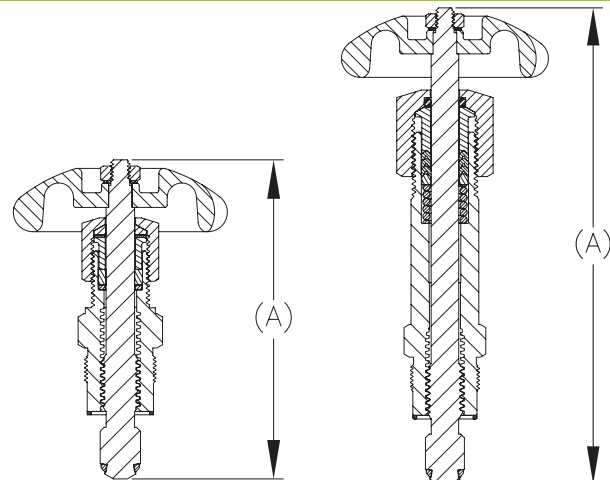
Retrofit kits may be used to convert the 9450 and 9460 series short stem shut off valves into extended stem style. The conversion can be done without removing the valve from your system. Available in two stem lengths. All kits are oxygen cleaned and packaged per CGA G-4.1.

### Materials

Body .....	Brass
Seat Disc .....	PCTFE
Handwheel.....	Aluminum
Packing.....	PTFE
Stem .....	Stainless Steel
Stem Seal Gasket.....	PTFE

### Ordering Information

Part Number	Stem Length A	Style
<b>BK9450R</b>	6.5" (165.1mm)	Extended Bonnet and Stem, Spring Loaded Packing



# Cryogenic Pressure Builder RG Series

## Application (For LGC)

RG series cryogenic regulators are primarily designed to maintain pressure on cryogenic liquid within cryogenic containers. They may also be used in cryogenic lines, vaporizer and converter applications. They are especially useful in installations where space and cost limitations are important.

## Features

- All parts are copper alloy (brass), PTFE and stainless steel—materials selected specifically for compatibility with cryogenic temperatures down to -320°F (-196° C)
- PTFE seat helps assure a positive shut-off at cryogenic temperatures down to -320°F (-196° C)
- High and low pressure regulators are the same compact size—designed to fit in close quarters
- Interchangeable with existing cryogenic regulator units
- Inlet filter helps prevent foreign material from entering the regulator
- Locknut is provided to maintain adjusting screw setting
- RG090AG is available with T handle adjustment screw and gauge ports
- Maximum inlet pressure of 550 psig (37.9 barg)
- Cleaned for oxygen service per CGA G-4.1
- 100% Factory Tested

## Materials

Body .....	Brass
Bonnet .....	Brass
Seat .....	PTFE
Springs .....	Stainless Steel
Diaphragm Gasket.....	PTFE
Backcap Gasket .....	Copper
Diaphragm.....	Bronze

## Ordering Information

Part Number	Inlet / Outlet Connections (F.NPT) A Inches (mm)	Width B Inches (mm)	C Inches (mm)	D Inches (mm)	Operating Range (psig)
RG022A	¼" (6.35)	2 <sup>1</sup> / <sub>16</sub> " (52.32)	3" (76.20)	1" (25.40)	0-30 psig (0-2.1 barg)
RG125A					25-250 psig (1.7-17.2 barg)
RG125C3	¾" (9.52)	2 <sup>1</sup> / <sub>8</sub> " (53.97)	3.33" (84.58)	0.80" (20.32)	125-350 psig (17.2-24.2 barg)
RG175C3					25-250 psig (1.7-17.2 barg)
RG300A	¼" (6.35)	2 <sup>1</sup> / <sub>16</sub> " (52.32)	3" (76.20)	1" (25.40)	125-350 psig (17.2-24.2 barg)
RG90AG					25-250 psig (1.7-17.2 barg)

\*Contact sales representative for additional settings.



**RG Series**



**RGXXXAG with gauge port & T handle**

